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**A support member**

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ABSTRACT:

The invention relates to a strut for supporting a member in an extended position. The strut has particular application for use in supporting a foldable clothesline frame in the raised position. The invention also relates to clothesline assemblies using the strut to maintain the raised position. One clothesline assembly includes a frame having a centrally located member and two spaced apart cross members between which a clothesline is suspended.

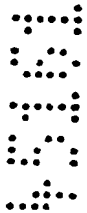
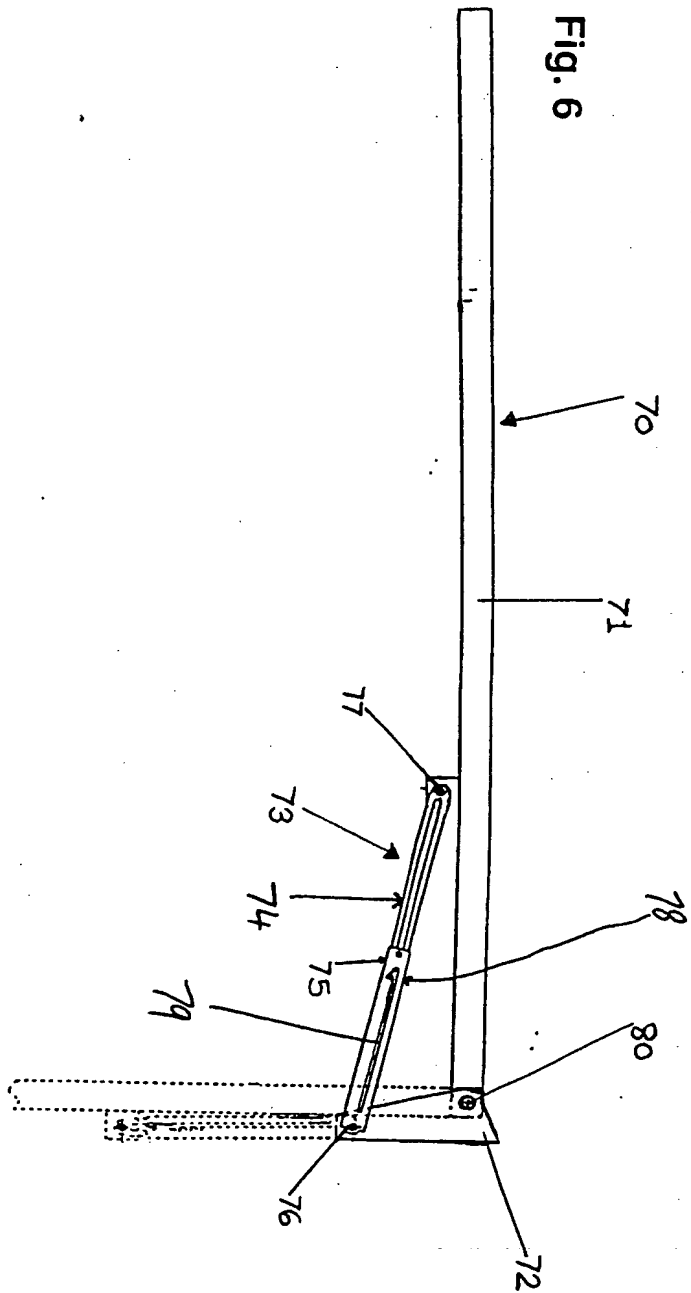


Fig. 6



## A SUPPORT MEMBER FOR A CLOTHESLINE FRAME

### Field of Invention

This invention relates to a support member such as a strut for supporting a laterally extending member from a mounting. The current invention has particular but not exclusive application as a strut for supporting a clothes line frame. The present invention also relates to a clothesline and in particular to a foldable clothesline.

The current invention will be described by way of example only with reference to clotheslines and supports for a clothesline frame.

### Prior Art

A conventional foldable clothesline has a U shaped frame with a plastic line suspended between opposing arms of the frame. Clothes are normally hung from the plastic line for drying. The frame is attached to uprights or mounted to a wall and moved between a raised or unfolded position and a lowered or folded position. Each arm of the frame is usually supported in the raised position by a strut. The struts are usually made of a thinner gauge material than the material used to manufacture the U shaped frame. Over a prolonged period the continuous raising and lowering of the U shaped frame and the weight of the wet clothes hung on the frame may cause failure of the frame to be maintained in a raised position.

A number of different types of struts have been developed to overcome this problem. The foldable clothesline disclosed in Australian Patent AU529270 is a U shaped clothes line frame supported by a strut on each arm of the frame. Each strut has a sleeve slidable along a shaft. One end of the sleeve is fastened to the arm. The sleeve is able to slide along the shaft and abut a protruding screw thereby fixing

the frame in a raised position. The abutment of the sleeve against the protruding screw maintains the frame at a desired height.

In Australian Patent AU691055 a foldable clothesline is described that has a retractable telescopic strut with a locking mechanism located therein. The foldable clothesline described in Australian Patent Application AU94/68631 has multiple struts supporting each arm of the U shaped frame. The frame is pivotally mounted to a bracket supported by the struts in tension. The struts are connected to the bracket and are able to slide within a slot in the bracket thereby moving the frame between a raised and a lowered position.

The struts of the foldable clotheslines described above suffer potential functional problems with prolonged use or are relatively expensive to manufacture and install.

### Summary on the Invention

The present invention in one aspect broadly resides in a support member including:

an elongate sleeve having a slot extending along the longitudinal axis of the sleeve and having at least one recess along the periphery of the slot;

an elongate member slidably receivable within said sleeve; and

latch means associated with said elongate member, said latch means includes a spring biased latch member with an engagement portion and a gate member operatively associated with the engagement portion;

wherein said engagement portion is able to pass forwardly along the slot and engage said recess, said engagement portion is substantially prevented by the gate member from re-engaging said recess while passing backwardly along the slot.

The support member preferably includes attachment means for enabling the sleeve and the elongate member to be attached to respective structural members such as clothesline frame and mounting upright.

Movement forwardly is an expanding movement of the support member with extension of the elongate member relative to the elongate sleeve, whereas backward movement is retracting movement of the support member with retraction of the elongate member relative to the elongate sleeve.

In a preferred embodiment the spring biased latch member is operatively locatable within an aperture of the elongate member. In the embodiment, the gate member is operatively retained adjacent the latch member with the engagement portion protruding through an aperture in the gate member. The aperture of the gate member allows the engagement portion to move within the aperture independent of the movement of the gate member. The gate member of the embodiment is not attached to the elongate sleeve, elongate member, or latch member and is pulled or pushed by the engagement portion. The gate member by virtue of its shape provides a barrier to the engagement portion for re-engaging the recess when the engagement portion is moved backwardly towards the recess. The gate member preferably has a barrier portion that is locatable adjacent the recess and bridges either side of the recess.

Preferably there is one recess. However in another embodiment there may be a plurality of recesses along the periphery of the slot. The recess is preferably inclined to provide an angled ramp to facilitate the forward movement of the engagement portion from the recess.

In another aspect the invention broadly resides in a support member including:

first and second members arranged telescopically relative to each other and movable between an expanded condition and a contracted condition;

check means for checking movement of the first and second members relative to each other in the expanded condition, the check means including a latch associated with the first member having an engagement portion, and a recess defined in the second member receiving the engagement portion, and the engagement portion being biased into engagement with the recess; and

release means including a gate member for resisting engagement of the engaging portion in the recess, when the members are expanded beyond the check means and then moved back towards a contracted condition.

Preferably the recess has an inclined wall to guide the engagement portion back out of the recess when the members are expanded beyond the check means.

Preferably the gate member is displaced to a position extending across the recess by the first member when the first member is expanded beyond the check means.

In another aspect the invention broadly resides in a foldable clothesline assembly including

a mounting member;

a clothesline frame pivotally attached to the mounting member; and

a support member as described above and pivotally attached to the mounting member and the clothesline frame.

The support member of the clothesline assembly is as described above and serves as a strut to enable the clothesline frame to be raised and lowered. Where the support member has a plurality of recesses the height of the clothesline frame relative to the ground can be adjusted.

The gate member of the support member enables the clothesline frame to be lowered with minimal raising of the clothesline frame to effect movement of the engagement portion from the recess. The movement of the engagement portion from the recess and also positions the gate member to block the engagement portion from re-engaging the recess with backward movement of the engagement portion along the slot.

In one embodiment the clothesline frame may be a U-shaped frame where a support member may be attached to each arm of the frame.

In an alternative embodiment the clothesline frame may have a single elongate member with two transverse arms spaced from each other. The transverse arms are preferably parallel with each other and perpendicular to the elongate member. Preferably clothesline is suspended between the transverse arms. Preferably the elongate member is positioned at the midpoint of each of the arms. Preferably one of the said arms extends transversely across the elongate member at one end. The other arm preferably extends transversely across the elongate member adjacent the other end of the elongate member. The elongate member may be made of rectangular, oval or circular section tubing.

It is desirable to be able to protect the clothes hung on the line from the weather to avoid the hung clothes from becoming wet with the rain or bleached from the sun. In one embodiment the mounting member or clothesline frame has some form of weather protector that can be suspended across the frame. Preferably the weather protector is removable or releasable. In a more preferred form the weather protector is a blind attachable to the mounting member and extendable across the frame. The blind is preferably spring biased and is retractable. The blind preferably



maintained in the extended state by fastening means such as hook and loop fasteners that are sold under the trade mark Velcro.

### Brief Description of the Drawings

In order that this invention may be more readily understood reference will now be made to the accompanying drawings which illustrate preferred embodiments of the invention and wherein:

Fig 1A,B and C are diagrammatic views of the sleeve;

Fig 2A and B are diagrammatic views of the elongate member;

Fig 3 is a diagrammatic view of the latch;

Figs 4 and 5 are alternative embodiments of the gate member;

Fig 6 is a diagrammatic view of the clothesline assembly;

Fig 7 is a diagrammatic view of an alternative clothesline assembly with a support member;

Figs 8 and 9 are diagrammatic views of the clothesline assembly of Fig 7 when mounted to a wall wherein Fig 8 shows the clothesline assembly in the folded position and Fig 9 shows the clothesline assembly in the raised position.

### Detailed Description of the Preferred Embodiments

With reference to Figs 1 to 9, there is shown a sleeve 10 having an elongate slot 11 and a recess 12 extending along the slot 11. The recess 12 has an inclined forward portion 13 which forms a ramp to allow an engagement pin 26 to move out of and forward from the recess 12. An inclined forward portion 13 of slot 11 is forward and adjacent of the recess 12. The sleeve 10 has an end 14 for attachment to a first structural member.

An inner shaft 15 is receivable within sleeve 10. The inner shaft 15 can slide within the sleeve 10 enabling the engagement pin 26 to engage recess 12. The inner shaft 15 has an end 16 for attachment to a second structural member. The inner shaft has a rib 17 extending along its length. The rib 17 serves to strengthen the inner shaft 15 and to maintain the position of the separate components during use. The inner shaft 15 also has an end 18 with return flanges 19 for retaining the gate member 30. The inner shaft 15 also has an aperture 20 for locating latch 21. The latch 21 is biased with spring 22 abutting the upper edge portion 23 of the latch 21 and periphery portion 24 within the aperture 20. The latch 21 has an engaging pin 26 that extends laterally from either side of the latch 21. In another embodiment there may be a slot only on one side of the sleeve and an engagement pin that extends from only one side of the latch.

The gate member 30 has a protruding portion 31 as shown in figure 4. An alternative gate member 30a is shown in figure 5. The gate members 30 and 30a also have apertures 33 and 33a respectively through which engagement pin 26 projects. With respect to the gate member 30 shown in figure 4 there is a protruding portion 31 which has an upper edge portion 35 enabling the engagement pin 26 to pass along the upper edge portion 35 and prevent the engagement pin 26 from re-engaging the recess 12 when the engagement pin 26 moves backward from a position forward of the recess 12.

With reference to the alternative embodiment of the gate member 30a shown in figure 5 there is a protruding portion 32a which has an obliquely disposed front edge portion 36a that enables the engagement pin 26 to pass over the recess 12 with backward movement of the engagement pin 26.

With reference to Figure 6, there is shown a clothesline assembly 70 having a clothesline frame 71, mounting 72 and a slidable strut 73. The strut 73 includes an inner shaft 74 and sleeve 75. One end of the sleeve 75 is pivotally attached by a fastener 76 to mounting 72 and one end of the inner shaft 74 is attached by a fastener 77 to clothesline frame 71. The inner shaft 74 is at least partially retained within the sleeve 75 during the raising and lowering of the clothesline frame 71. As described previously the inner shaft 74 has a latch that includes a laterally extending engagement pin (not shown). The pin is engaged in recess 78 along the periphery of the slot 79. When the clothesline frame 71 is to be lowered the engagement pin is moved forward out of the recess during which the protruding portion of the gate member closes the recess and then the pin is able to move backwards along the slot 79 without re-engaging the recess 78.

In use the frame 71 is moved slightly upward corresponding to the forward movement of the pin. The frame is then allowed to move downwards during which the engagement pin moves backwards and the inner shaft 74 slides into the sleeve 75. The overlap of inner shaft 74 with sleeve 75 provides additional strength to the strut 73. The clothesline frame 71 is pivotally attached to mounting 72 by fastener 80. Mounting 72 may be mounted to a wall or another upright structure.

An advantage of the strut 73 is that only a small amount of upward movement of the frame 71 is required to lower the frame 71. The frame 71 is easily raised and lowered as only a small amount of upward movement is required to effect lowering the frame 71. Therefore lowering the frame 71 is not biased against users who are short or who have a short reach. Furthermore the operation of lowering the frame 71 is simple allowing the weak and elderly to easily manipulate the frame 71.

A further advantage of the preferred embodiment of the strut is the additional strength and stiffness provided by the design of the strut with having a shaft positioned within a sleeve.

In Fig 7 there is shown a clothesline assembly 100 having a clothesline frame 101 pivotally mounted to mounting bracket 102 and an extendable strut 103 pivotally attached to both the frame 101 and mounting bracket 102. The frame 101 has an elongate arm 104 which is pivotally attached by pivot pin 105. The frame 101 also has line arms 106 and 107 which extend across the elongate arm 104. The line arm 107 extends across the free end of the elongate arm 104. The elongate arm 104 is located at the midpoint of line arm 107. The line arm 106 extends across the elongate arm 104 adjacent the other end of the elongate arm 104. The line arm 106 is attached at its midpoint to the elongate arm 104. Line arms 106 and 107 are parallel to each other and perpendicular to the elongate arm 104. Line 108 is suspended between the opposing line arms 106 and 107. The mounting bracket 102 may be mounted to a wall (as shown in Figs 8 and 9) or to some other upright structure. The strut 103 has a sleeve 109 and a shaft 110. The shaft 110 is pivotally attached to the elongate arm 104 at pivot 111. The sleeve 109 is pivotally attached to the mounting bracket 102 at pivot 112. When the frame 101 is in the raised position as shown in Figs 7 and 9 the strut 103 is in an extended position whereas when the frame is the lowered position as shown in Fig 8 the strut 103 is in a retracted position.

It will of course be realised that while the foregoing has been given by way of example, all such and other modifications and variations there too as would be apparent to persons skilled in the art are deemed to fall within the broad scope and ambit of this invention as here in set forth.

CLAIMS

## 1. A support member including:

an elongate sleeve having a slot extending along the longitudinal axis of the sleeve and having at least one recess along the periphery of the slot;

an elongate member slidably receivable within said sleeve; and

latch means associated with said elongate member, said latch means includes a spring biased latch member with an engagement portion and a gate member operatively associated with the engagement portion;

wherein said engagement portion is able to pass forwardly along the slot and engage said recess, said engagement portion is substantially prevented by the gate member from re-engaging said recess while passing backwardly along the slot.

## 2. The support member as claimed in claim 1 wherein there is attachment means for enabling the sleeve and the elongate member to be attached to respective structural members.

## 3. The support member as claimed in claim 1 or 2 wherein the spring biased latch member is operatively locatable within an aperture of the elongate member and the gate member is operatively retained adjacent the latch member with the engagement portion protruding through an aperture in the gate member.

4. The support member as claimed in claim 3 wherein the engagement portion can move within the gate member aperture independent of the movement of the gate member.
5. The support member as claimed in claims 3 or 4 wherein the gate member is not attached to the elongate sleeve, elongate member, or latch member and is pulled or pushed by the engagement portion.
6. The support member as claimed in any one of the preceding claims wherein the gate member by virtue of its shape provides a barrier to the engagement portion for re-engaging the recess when the engagement portion is moved backwardly towards the recess.
7. The support member as claimed in claim 6 wherein the gate member has a barrier portion that is locatable adjacent the recess and bridges either side of the recess.
8. The support member as claimed in any one of the preceding claims wherein the recess is preferably inclined to provide an angled ramp to facilitate the forward movement of the engagement portion from the recess.
9. A foldable clothesline assembly including  
a mounting member;  
a clothesline frame pivotally attached to the mounting member; and

a support member as claimed in any one of the preceding claims and pivotally attached to the mounting member and the clothesline frame.

10. The foldable clothesline assembly as claimed in claim 9 wherein the clothesline frame is a U-shaped frame.
11. The foldable clothesline assembly as claimed in claim 9 wherein the clothesline frame has a single elongate member with two transverse arms spaced from each other and clothesline is suspended between the transverse arms.
12. The foldable clothesline assembly as claimed in claim 11 wherein the transverse arms are parallel with each other and perpendicular to the elongate member and clothesline is suspended between the transverse arms.
13. A foldable clothesline assembly as substantially described herein with reference to and as illustrated by the accompanying drawings.
14. A support member as substantially described herein with reference to and as illustrated by the accompanying drawings.

DATED THIS TENTH DAY OF JULY 2000.

DAVID ROSTRON NICHOLSON

BY

PIZZEYS PATENT AND TRADE MARK ATTORNEYS

Fig. 1A

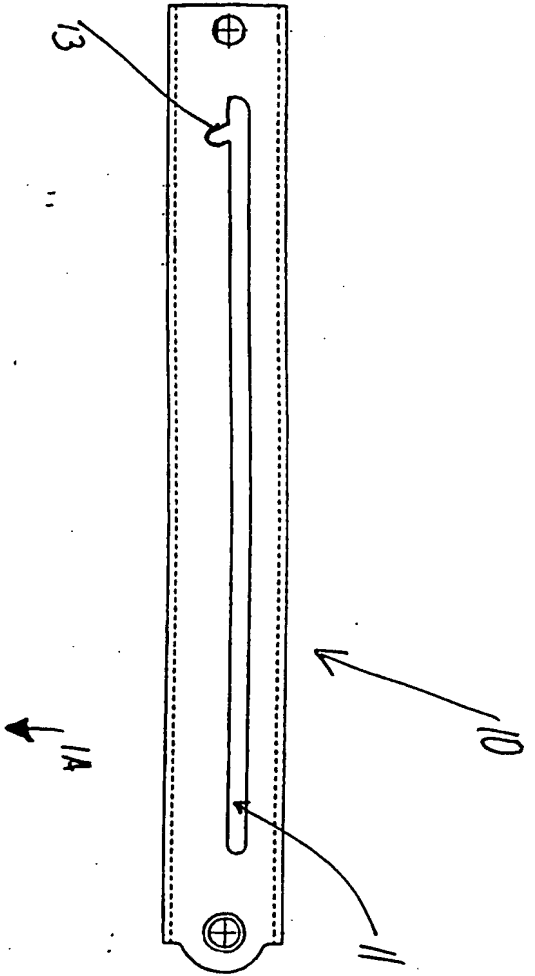


Fig. 1B

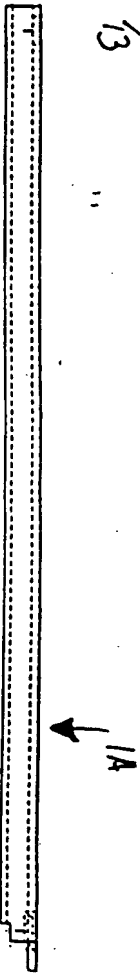
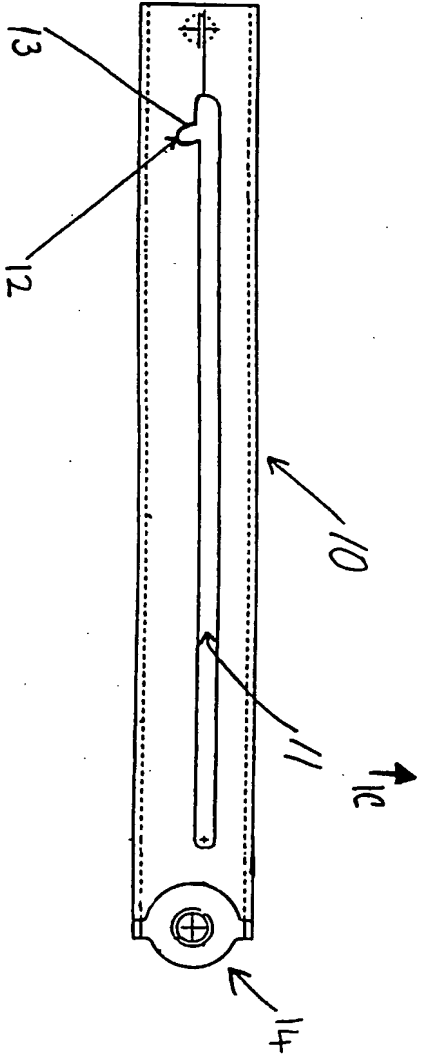


Fig. 1C



10 11 12 13 14



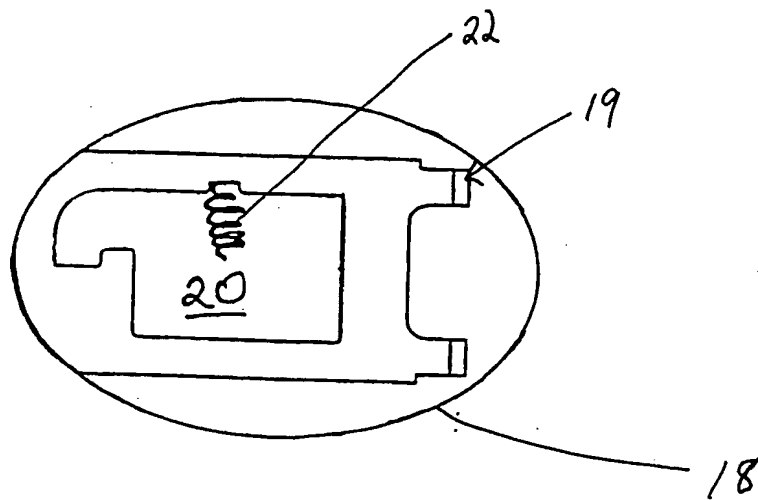
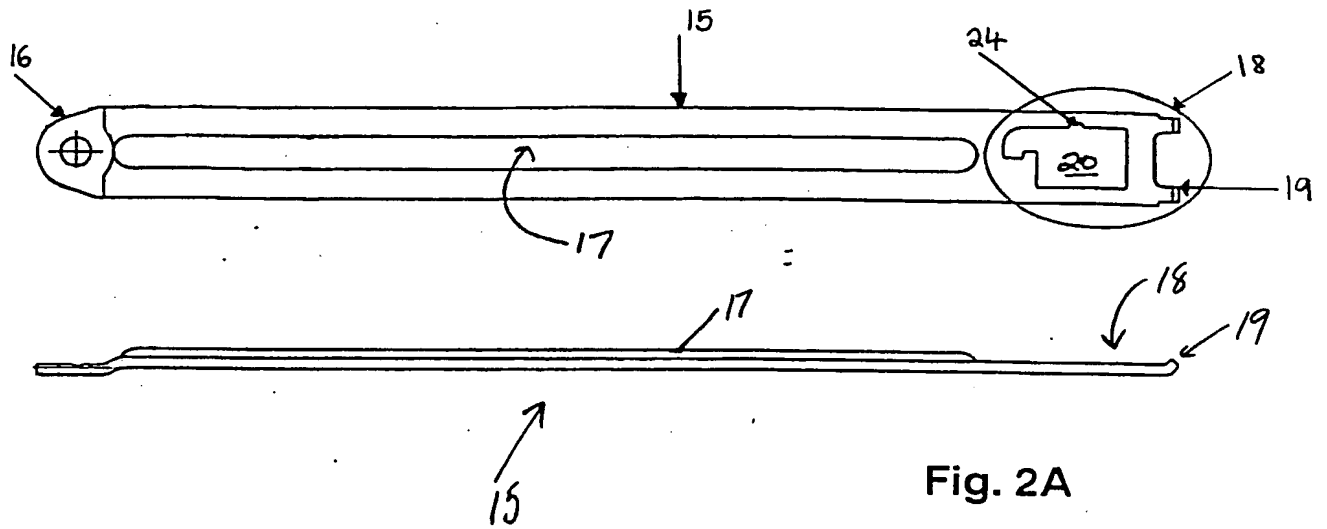


Fig. 3

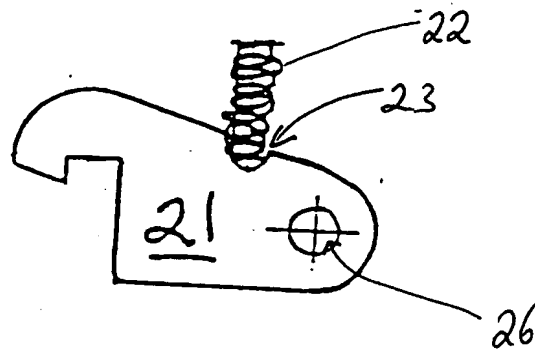


Fig. 4

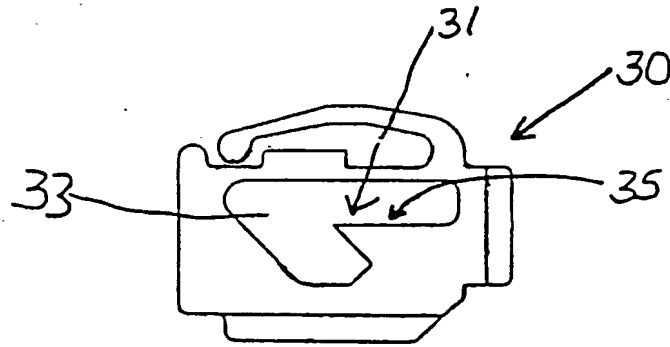


Fig. 5

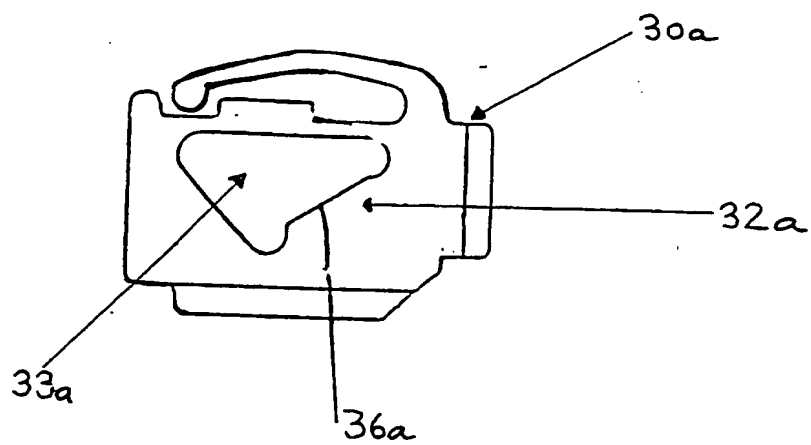
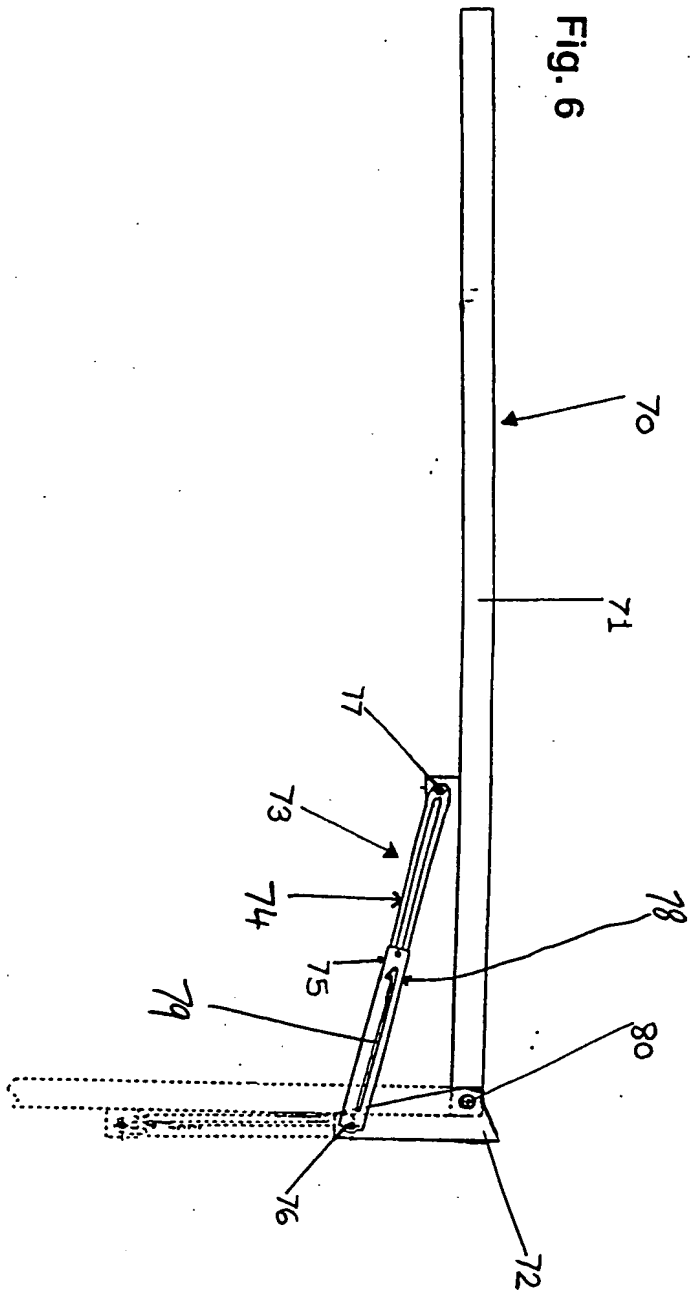


Fig. 6



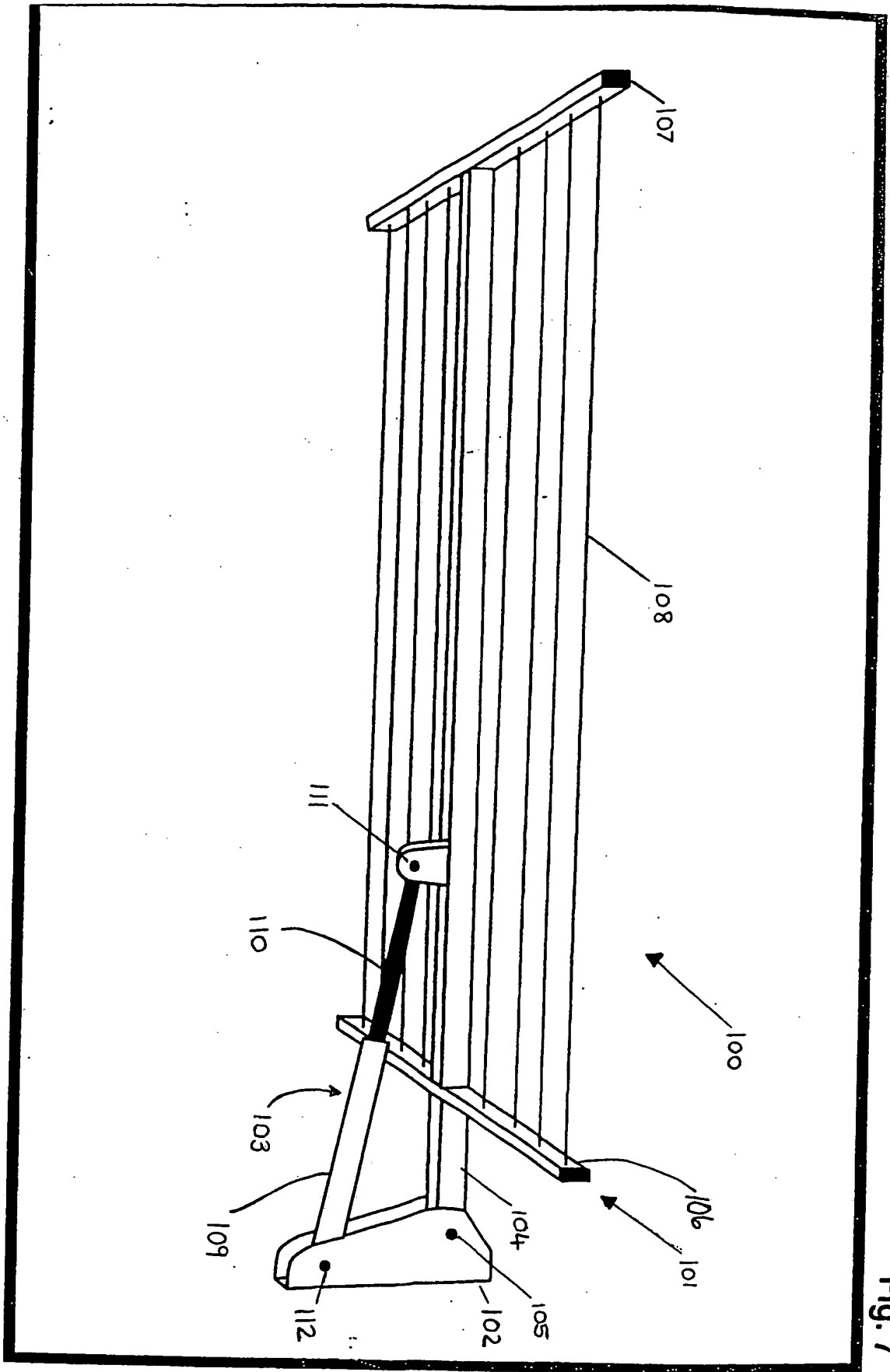


Fig. 7

100 101 102 103 104 105 106 107 108 109 110 111 112

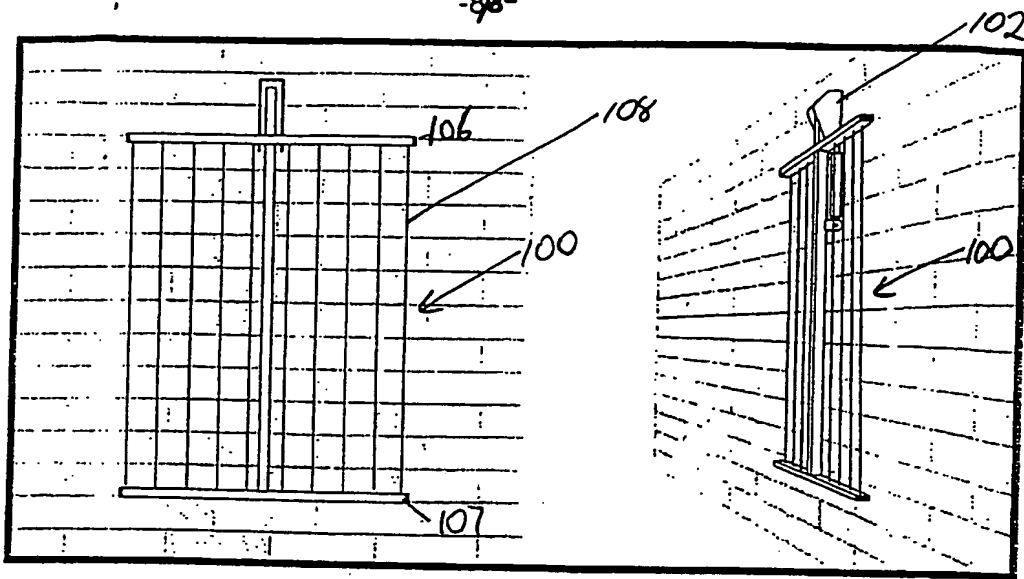


Fig. 8

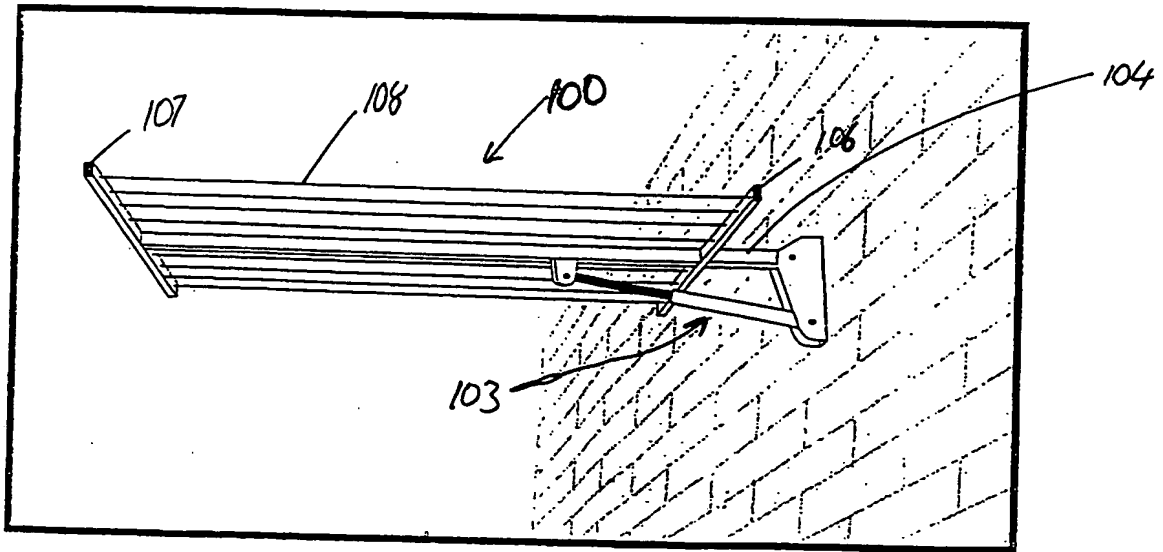


Fig. 9